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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/189,637	11/10/1998	SHIROU SUZUKI	06257.0026	5700

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

LAO, LUN S

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 02/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/189,637

Applicant(s)

SUZUKI, SHIROU

Examiner

Lun-See Lao

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01-06-2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. This action is response to amendment filed on 01-06-2006. Claims 1-2 and 8-9 have been amended and claims 13-14 have been added. Claims 1-14 are pending.

Continued Prosecution Application

2. The request filed on 10-18-2005 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on suspension requested parent Application No. 09/189,637 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagami (US PAT. 5,293,578) in view of Sakata (US PAT. 5,388,159).

Consider claim 1, Nagami teaches a noise reduction apparatus (see fig.5 (50)) which reduces a noise level of noise contained in an input signal, comprising:

a detecting device (Sin and 1,1'), which detects the noise level of the noise from the input signal by use of the frequency component of the input signal;

a gain controlling device (54) which generates a first control signal (arrow to 2 (delaying means)) and a second control signal (arrow to 4 (amplifier)) on the basis of the detected noise level (from, 52), the first control signal (arrow to 2 (delaying means)) being used for adjusting a level of the input signal so as to make the detected noise level equal to a predetermined threshold level (such as delaying factor and gain factor), and the second control signal (arrow to 4 (amplifier)) being used for adjusting (54) a level of a reduced adjusted signal so as to restore (by memory) the level of the reduced adjusted signal to an original level of the input signal (see col. 3 line 32-col.4 line 68),

an adjusting device (1,2) which adjusts the level of the input signal that does not pass the high pass filter on the basis of the first control signal (arrow to 2 (delaying means)),

a reducing device (4), which reduces a level of the adjusted input signal in accordance with a predetermined reducing characteristic (such as factor) and generates the reduced adjusted signal, and,

a restoring device (51 and 3 (processor)) which restores the level of the reduced adjusted signal to the original level of the input signal on the basis of the second control signal (arrow to 4 (amplifier))(see col. 3 line 32-col. 6 line 9); and Nagami indicates the high frequency of the input signal (see figs. 3-4), but Nagami does not clearly teach a high pass filter which extracts a high filter frequency component of the input signal from the input signal; and the high frequency component of the input signal.

However, Sakata teaches that a high pass filter (see fig.21 (61)) which extracts a high filter frequency component of the input signal from the input signal; and a detecting device (Sin and 1,1'), which detects the noise level of the noise from the input signal by

use of the high frequency component of the input signal (see fig. 21 (61)) and see col. 10 line 31-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Sakata into the teaching of Nagami to provide an audio signal equalizing circuit by disposing a mode function capable of adding high frequency components in the audible frequency region, which are removed by a transmitting system at reproducing audio signal restricted in the band, and by making this mode function act at need so as to obtain rich reproduced sound.

As to claim 8, there is a method claim corresponding to apparatus claim 1. See previous apparatus claim 1 rejection.

Consider claim 2, Sakata teaches a rectifying device (62) which rectifies the extracted high frequency (61) component; an envelope signal generating device (62) which generates an envelope signal of the said extracted high frequency component (61), and a level analyzing device (65) which detects a lowest level of the said envelope signal (see col.9 line 22-col.11 line 49).

As to claim 9, there is a method claim corresponding to apparatus claim 1. See previous apparatus claim 2 rejection.

Consider claims 3-5, Nagami teaches the noise reduction apparatus wherein said detecting device comprises:

a sound existing part detecting device (see fig.10a, 14) which detects a sound existing part of the input signal, and

Art Unit: 2644

a noise level detecting device (see fig.5, 50) which detects the noise level of the noise contained in the sound existing part (see col. 3 line 32-col. 4 line 68); and the noise reduction apparatus, wherein said adjusting device (see fig.5, 50) comprises:

a determining device (55) which determines whether or not the noise level of the noise is higher than the predetermined threshold level; and

a level adjusting device (54) which adjusts the level of the input signal so as to make the noise level equal to the predetermined threshold level if said determining device determines that the noise level is higher than the predetermined threshold level (see col. 5 line 1-col. 6 line 9); and the noise reduction apparatus, wherein said reducing device comprises:

a dividing device (see fig.5, (51)) which divides the adjusted input signal into a plurality of divisional components (1, and 1') whose frequency bands are different from each other;

a plurality of signal level detecting devices (1, and 1'), each of which detects a level of one of the divisional components,

a plurality of attenuating devices (2, and 4), each of which attenuates one of the divisional components on the basis of the detected level of the corresponding divisional components (52),

a mixing device (3) which mixes all of the attenuated divisional components (4 and see col. 3 line 32-col. 4 line 68).

As to claims 10-12, these are the method claims of claims 3-5, respectively. Thus note claims 3-5, respectively, for rejections.

Art Unit: 2644

Consider claims 6-7, Nagami teaches the noise reduction apparatus, wherein said adjusting device (see fig.5, (54)) comprises an attenuator (2,4), and said restoring device (51 and 3 (processor)) comprises an amplifier (4 and see col. 3 line 32-col. 4 line 68) and the noise reduction apparatus, wherein said amplifier amplifies the reduced adjusted signal by using an inverse number (such as, reverse) of an attenuation factor of said attenuator as an amplification factor (see col. 3 line 32-col. 4 line 68).

5. Claims 13-14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagami (US PAT. 5,293,578) as modified by Sakata (US PAT. 5,388,159) as applied to claims 1 and 8 above, and further in view of Klingelhofer et al (US PAT. 4,901,150).

Consider claim 13, Nagami and Sakata do not clearly teach the noise reduction apparatus of the gain controlling device does not generate the first control signal and the second control signal in case the detected noise level is smaller than the predetermined threshold level.

However, Klingelhofer teaches that the noise reduction apparatus of the gain controlling device does not generate the first control signal and the second control signal in case the detected noise level is smaller than the predetermined threshold level (see col. 3 line 13-col. 4 line 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Klingelhofer into the teaching of Nagami and Sakata to improve the quality of the output signal of an automatic noise

Art Unit: 2644

reduction system by independently processing the frequency components of the input signal to such system.

As to claim 14, there is a method claim corresponding to apparatus claim 13. See previous apparatus claim 13 rejection.

Response to Arguments

6. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Amazawa (US PAT. 4,899,389) and Shiono (US PAT. 5,734,987) are recited to show other related the noise reduction apparatus and noise reduction method.

8. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:
(571) 273-8300

Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner

Art Unit: 2644

should be directed to Lao,Lun-See whose telephone number is (571) 272-7501 The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See *L.S.*
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501
Date 01-25-2006


HUVEN LE
PRIMARY EXAMINER